

Title (en)
Photosensitive resin composition, color filter, and copolymer resin useful for them

Title (de)
Lichtempfindliche Zusammensetzung, Farbfilter und dafür geeignetes Copolymerharz

Title (fr)
Composition photosensible, filtre coloré et résine copolymère destinée à ceux-ci

Publication
EP 1035439 A2 20000913 (EN)

Application
EP 00103385 A 20000224

Priority
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Abstract (en)
There is provided an epoxy-containing copolymer resin comprising 0 to 55% by mole of constituent units represented by formula (1), 5 to 95% by mole of constituent units represented by formula (2), and 5 to 95% by mole of constituent units represented by formula (3), the constituent units represented by formula (1) having been partially reacted, through carboxyl groups thereof, with a (meth)acryloylalkyl isocyanate compound, the constituent units represented by formula (2) having been partially reacted, through hydroxyl groups thereof, with a (meth)acryloylalkyl isocyanate compound, the copolymer resin containing 5 to 95% by mole of (meth)acryloyl groups and having an acid value of 0 to 400 mg KOH/g and a weight average molecular weight of 5,000 to 1,000,000 as determined using polystyrene as a standard: <CHEM> <CHEM> wherein R represents hydrogen or an alkyl group having 1 to 5 carbon atoms; R1 represents an alkylene group having 2 to 4 carbon atoms; R2 represents an alkylene group having 1 to 4 carbon atoms; Z represents a 1,2-epoxy, 1,3-epoxy, or 1,4-epoxy group; and a, b, and c are integers respectively corresponding to said molar percentages. There is further provided a photosensitive resin composition comprising: the above epoxy-containing copolymer resin; an alkali-developable photocurable copolymer resin; a bifunctional or higher polyfunctional photopolymerizable acrylate monomer; and an initiator, the alkali-developable photocurable copolymer resin comprising 5 to 55% by mole of constituent units represented by formula (1) and 5 to 95% by mole of constituent units represented by formula (2), the constituent units represented by formula (1) having been partially reacted, through carboxyl groups thereof, with a (meth)acryloylalkyl isocyanate compound, the constituent units represented by formula (2) having been partially reacted, through hydroxyl groups thereof, with a (meth)acryloylalkyl isocyanate compound, the copolymer resin containing 5 to 95% by mole of (meth)acryloyl groups and having an acid value of 5 to 400 mg KOH/g and a weight average molecular weight of 5,000 to 1,000,000 as determined using polystyrene as a standard. There is still further provided a color filter comprising: a transparent substrate; a colored layer provided on the transparent substrate; and a protective layer provided so as to cover the colored layer, the protective layer having been formed by coating the above photosensitive resin composition, exposing the coating, developing the exposed coating with an alkali, and heating the developed coating. <IMAGE>

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